DETAILED ACTION

1. Applicant filed Amendment on 04/06/2010 amending Claims 1, 43, and 46, and canceling claims 21, 29, 44, and 47. Currently, Claims 1-20, 22-28, 30-43, and 45-46 are pending.

2. Claim 1 is to an "apparatus", and is statutory since it recites means plus language, requiring physical hardware as supported in the specification. The claim is statutory.

3. Regarding Claim 43, the claim is in a method claim format and cannot (and would not) reasonably or realistically be carried out without the aid of particular programmed computer due to the computational complexity of the recited steps. Thus, the claim passes the machine-or-transformation test *(In* re Bilski) and is eligible for patent protection.

Response to Amendment

The amendment received 04/06/2010 has been entered in full.

Response to Arguments

Applicant's arguments, see pages 8-11, filed 04/06/2010, with respect to the

claims have been fully considered and are persuasive. The rejection of the pending claims has been withdrawn.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given by Andrew Harry examiner's initiated telephone interview on May 12th, 2010.

Claim 46 (Currently Amended): A non-transitory recording medium storing a computer-readable program, the computer-readable program comprising:

an estimating step for estimating the position of a second point representing a tracking point in an image of a temporally next unit of processing, the second point corresponding to a first point representing the tracking point in an image of a temporally previous unit of processing;

a generating step for generating estimated points serving as candidates of the first point when the position of the second point is inestimable;

a determining step for determining the second point in the next unit of processing on the basis of the estimation result of the position estimating step when the position of the second point in the next unit of processing is estimable; and

a selecting step for selecting the first point from among the estimated points when the position of the second point is inestimable, wherein

the determining step includes

an evaluation value computing step for computing an evaluation value representing a correlation between pixels of interest representing at least one pixel including the first point in the temporally previous unit of processing and the corresponding pixels representing at least one pixel in the temporally next unit of processing and defined on the basis of a motion vector of the pixel of interest;

a variable value computing step for computing a variable value representing the variation of a pixel value with respect to the pixel of interest; and an accuracy computing step for computing the accuracy of the motion vector, and

the variable value computing step includes computing the variable value representing the sum of values obtained by dividing the sum of absolute differences between the pixels of interest and the adjacent pixels that are adjacent to the pixels of interest in a block including the pixels of interest by the number of the adjacent pixels.

Allowable Subject Matter

3. Claims 1-20, 22-28, 30-43, and 45-46 are allowed over the prior art of record. The following is an examiner's statement of reasons for allowance:

Sun et al. (US Patent 6,731,799) discloses an Object tracking and segmentation method for video frames using iterative pixel grouping. Where the object contours are derived by relaxing the edge constraints on contour changes from one frame to the next. The contour energy is minimized while also considering normalized background information and motion boundary information. The background and boundary information define the object boundary propagation from one frame to the next, relaxing the constants on contour topography.

Magarey (US PGPub 2003/0053661) outlines a video feature tracking method for digital video analysis, involves updating reference data with feature data when difference between reference data and feature data is larger than predetermined value Where the feature position in current frame is estimated based on the position in previous frame and the feature data is extracted from the current frame. The extracted feature data is compared with reference data and when the difference between feature and reference data is larger than a predetermined value, and then the reference data is updated with feature data.

Sawasaki et al. (U.S. 5,838,365) teaches a local region image tracker for continuous tracking, suitable for high speed tracking of several objects in a scene. The image tracker includes an image data bus which transfers input image data from an image pick-up (camera). Several correlation tracking processors are coupled to the bus in parallel. The processors carry out a tracking process independently with respect to a

search image. The tracking process for several search images is carried out in a distributed manner by the processors.

Itokawa et al. (U.S. 7,024,040) discloses an image processing procedure involving connecting points between a background block and object block for forming closed curve from which outline of objective image is extracted. When significant activity is detected, block classification is performed to background, object and boundary blocks to detect their contact points which is set as initial stage and closed curve is termed by points sequentially from which outline objective image extracted.

Kondo et al (U.S. 2003/0156203) discloses an image processing device capable of determining a mixing ratio indicating the state in which a plurality of objects such as a background image and an image of a moving object are mixed. Kondo further teaches not only extracting the background pixel data but also data on a pixel of interest and its adjacent pixels. The method generates a plurality of relations among the pixel of interest, the adjacent pixel data, and the background pixel data. The method computes a mixing ratio indicating the mixed state of the objects in the real world with respect to the noted pixel by using this relation.

Regarding the independent Claims 1, 43, and 46, the prior art of record, all fail alone or in combination to disclose or render obvious "wherein the determining step includes an evaluation value computing step for computing an evaluation value representing a correlation between pixels of interest representing at least one pixel

including the first point in the temporally previous unit of processing and the corresponding pixels representing at least one pixel in the temporally next unit of processing and defined on the basis of a motion vector of the pixel of interest; a variable value computing step for computing a variable value representing the variation of a pixel value with respect to the pixel of interest; and an accuracy computing step for computing the accuracy of the motion vector, and the variable value computing step includes computing the variable value representing the sum of values obtained by dividing the sum of absolute differences between the pixels of interest and the adjacent pixels that are adjacent to the pixels of interest in a block including the pixels of interest by the number of the adjacent pixels" these, in combination with the other respective claim limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Heidemann whose telephone number is (571)-270-5173. The examiner can normally be reached on Monday - Thursday/7:30 A.M. to

5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 571-273-8300 for After Final communications. TC 2600's customer service number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Heidemann/ 05/13/2010
Examiner, Art Unit 2624

/Andrew W Johns/
Primary Examiner, Art Unit 2624